ELSEVIER

*Optics and Lasers in Engineering* **20** (1994) 377–379
© 1994 Elsevier Science Limited
Printed in Northern Ireland. All rights reserved

# CONTENTS OF VOLUME 20

## Number 1

1 Editorial

3 Sheet Metal Welding Using a Pulsed ND:YAG Laser-Robot
Q. HUANG, G. KULLBERG & H. SKOOG (Sweden)

25 Contrast Enhancement of Pulsed ESPI Addition Fringes
G. H. KAUFMANN, D. KERR & N. A. HALLIWELL (UK)

35 Interferometric Evaluation of Wear of Spherical Surfaces
N. BARAKAT, M. S. SHAALAN, M. SOBEE & M. OSMAN (Egupt)

43 High-Speed Bridges for Fiber Optic Local Arera Networks
M. HAMDI (Hong Kong)

### Research Notes

53 Laser Safety: The Users' Problems and Requirements for the Solutions
L. H. VASSIE, J. R. TYRER, B. SOUFI & A. A. CLARKE (UK)

65 On Surface Damage Detection of Slightly Rough Metal Surfaces
J. RÄSÄNEN, R. SILVENNOINEN, K.-E. PEIPONEN (Finland) & T. ASAKURA (Japan)

71 Book Review

75 Announcements

78 Calendar

## Number 2

81 Initiation of Stress Corrosion Cracking of $Ti_{90}$-$Al_6$-$V_4$ Wire in Aqueous Solution: Non-Destructive Monitoring by Holographic Interferometry
K. HABIB (Kuwait)

87 Fast Fourier Transformed Electronic Speckle Contouring for Diffuse Surfaces Profilometry
D. PAOLETTI & G. S. SPAGNOLO (Italy)

97 Microlens Arrays Etched into Glass and Silicon
P. SAVANDER (Finland)

109 Optimisation of the Optical Method of Caustics for the Determination of Stress Intensity Factors
I. R. WALLHEAD, S. GÜNGÖR & L. EDWARDS (UK)

135 Digital Dynamic Photoelasticity
A. ASUNDI & M. R. SAJAN (Hong Kong)

141 Book Reviews

145 Announcements

149 Calendar

**Number 3**

153 Laser Safety Hazard Assessment — A Generic Model
J. R. TYRER, L. H. VASSIE, A. A. CLARKE & B. SOUFI (UK)

163 A Fringe Center Detection Technique Based on a Sub-pixel Resolution, and its Applications Using Sinusoidal Gratings
M. CHANG (Taiwan), P. P. LIN (USA) & W. C. TAI (Taiwan)

177 Flow Visualization Using Photochromic Dyes: A Review
S. KURADA, G. W. RANKIN & K. SRIDHAR (Canada)

193 Curvature Induced Mode Coupling in Large Core Optical Fibres with Step Refractive Index Profiles
D. SU, A. A. P. BOECHAT & J. D. C. JONES (UK)

207 On the Determination of Slope by Shearography
C. J. TAY, H. M. SHANG, A. N. POO & M. LUO (Singapore)

219 Book Review

221 Announcements

223 Calendar

**Number 4**

227 Guest Editorial

229 The Optimization of Three-Mirror Illuminating System for the Four-Beam Moiré Interferometer
M. RAFAŁOWSKI (Poland)

241 Variable Sensitivity Moiré Interferometry Using Binary Optic Technology
H. JOHNSON-COLE, J. A. GILBERT & J. H. BENNEWITZ (USA)

259 The Governing Equations of Moiré Interferometry I. The Effect of Out-of-Plane Displacement Gradients for Application to Crack-Tip Fields
C. R. SCHULTHEISZ & W. G. KNAUSS (USA)

283 The Governing Equations of Moiré Interferometry II. Gratings at ±45° to the Measurement Axes
C. R. SCHULTHEISZ & W. G. KNAUSS (USA)

295 Determination of Principal Stress Fields from Ray Deflection Patterns
H. P. ROSSMANITH (Austria) & Y. MORIMOTO (Japan)

307 Announcements

309 Calendar

**Number 5**

311 Laser Pulse Optimization for Practical Laser Drilling
B. S. YILBAŞ & A. Z. ŞAHIN (Saudi Arabia)

325 Natural Pixel Decomposition for Interferometric Tomographic Reconstruction from Ill-Posed Data
D. J. CHA & S. S. CHA (USA)

341 Spatial Chaos Aspects of Laser–Material Interaction
S. Y. LIM & C. R. CHATWIN (UK)

357 Operation Mode Analyses of Laser Scanning Imaging Systems
W. YIFEI, Z. JIANSEN & W. WEIRAN (China)

**Research Note**

365 An Automatic Quantitative Approach to Additive/Subtractive Moiré
P. K. RASTOGI (Switzerland)

369 Book Review

371 Announcements

375 Calendar